

Description

Toy

5 The invention relates to a toy. The invention is concerned in particular with toys which are composed of a plurality of elements which can be connected to one another.

10 Toys for children from the age of a few months or for small children are intended not only to prompt children to play, but, in addition, playing with the toy is also intended to lead to a successful learning experience for the child. In the case of toys for children of this

15 age, it is furthermore important that the toy is not hazardous for the child.

It is therefore the object of the invention to provide a toy for children from the age of a few months and for

20 small children which enables the child to obtain a successful learning experience while playing and which is not hazardous for the child.

The object on which the invention is based is achieved

25 by the features of Patent Claim 1. Advantageous developments and refinements are specified in the subclaims.

The toy according to the invention comprises a plurality of elements. The elements can be connected to one

30 another by means of at least one magnet and can be separated again from one another with little effort. Furthermore, each element is covered with a textile material.

35 One advantage of the toy according to the invention is that the child has to identify the magnetic connecting possibilities when joining together the elements and thereby obtains a successful learning experience, and a

second advantage is that the child cannot come directly into contact with hard surfaces, for example the surfaces of the magnets, on account of the textile covers. The textile covers also prevent, for example, the

5 child's fingers from becoming wedged between two magnets when the child is playing with the element. The toy according to the invention is therefore suitable even for very small children.

10 Furthermore, the textile covers of the elements also serve to provide the toy with an exterior which is attractive particularly for children.

One preferred refinement of the invention makes provision for two or more elements to contain in each case a permanent magnet which is fitted under a section of the textile cover. Two elements of this type can therefore be connected to each other by means of their permanent magnets.

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20 However, this works only if the magnetic dipole axes of the permanent magnets are appropriately aligned. Various possibilities are suitable for this.

25 For example, the magnetic dipole axes may be aligned essentially parallel to the connecting surface at which the two elements are to be brought into connection with each other. This means that both the north pole and the south pole of a permanent magnet are always directly

30 adjacent to the connecting plane, and so two elements fitted with permanent magnets aligned in such a manner can always be brought into connection with each other.

In the attempt to connect two elements configured in such a manner to each other, under some circumstances one of the elements has to be rotated about an imaginary axis which is orthogonal to the connecting surface until the different poles of the two elements come into

contact with each other. The magnetic interaction means, however, that the correct position is found more or less automatically, and so every attempt to connect two such elements to each other is successful. This refinement is therefore suitable in particular for even very small children.

A further possibility for aligning the magnetic dipole axes of the permanent magnets is to arrange two permanent magnets in such a manner that the two permanent magnets face the connecting surface, at which the two elements are to be brought into connection with each other, with different poles.

15 If the two permanent magnets lie opposite each other at the connecting surface with the same poles, then these two elements cannot be connected by the child. The child thereby learns to differentiate pairs of elements which can be connected to one another from those pairs in which this is not possible. One such refinement of the toy according to the invention is suitable only for small children on account of the increased demands placed on the child.

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25 It is also conceivable for one element to have more than one permanent magnet and accordingly to be able to be connected to a plurality of elements. If the magnetic dipole axes are aligned essentially orthogonally to the connecting surface, the number of possibilities there are for the child to join the elements together depends on the orientations of the magnetic dipole axes.

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A further preferred refinement of the toy according to the invention is characterized in that in one element a part of a magnetizable material, which, in particular, can be a metal, is fitted under a section of the textile cover. A further element has a permanent magnet in

turn arranged under a section of the textile cover. The two elements can therefore be connected to each other via the two sections of the textile covers on account of the permanent magnet and the magnetizable part arranged under them.

In this refinement of the invention too, the elements can again have more than one permanent magnet or more than one magnetizable part. Furthermore, this refinement may also be combined with the previously described refinement of the invention, i.e. some elements can be connected to one another via two permanent magnets while other pairs of elements are produced by the interaction between a permanent magnet and a magnetizable part.

In the final analysis, it is possible for the elements to be fitted with permanent magnets and, in particular, with magnetizable parts in such a manner that only a few possibilities exist, or even just one possibility exists in which the elements can be joined together. For this purpose, some elements are preferably fitted exclusively with magnetizable parts, while other elements only have permanent magnets. An element fitted with magnetizable parts therefore adheres only to an element equipped with a permanent magnet. Since the joining-together of such elements requires a relatively high level of comprehension by the child, such a refinement of the toy according to the invention is suitable only for small children.

In all of the possibilities described up to now of how permanent magnets and magnetizable parts can be combined, the magnetic dipole axes of the permanent magnets are preferably aligned either essentially parallel or essentially orthogonally to the connecting surfaces. The consequences arising from the particular orienta-

tion of the magnetic dipole axes have already been explained above.

The surface sections of two elements which butt against
5 each other in a magnetic connection advantageously have
a mutually corresponding surface geometry. The effect
of this where surface geometries vary is that certain
possibilities of combining the elements are already
ruled out because of the different surface geometries.
10 In addition, a magnetic connection can be brought about
more easily if the two surface sections belonging to
each other have a mutually corresponding geometry. In
particular, the connecting surfaces of the elements are
therefore essentially flat.

15 In order as far as possible to eliminate risks of injury for the child, it is furthermore advantageous if
the base material of the elements consists of a soft,
but nevertheless dimensionally stable material. In particular,
20 a soft foam material, such as, for example,
polyether foam, is suitable for the base material.

A further preferred refinement of the invention is characterized in that the elements are provided with
25 cutouts in which the permanent magnets and/or the magnetizable parts are held in such a manner that they are matched to the surface geometries of the elements. This avoids any risk of injury to two additional edges and also satisfies aesthetic commands placed on the external form of the elements.

30 The textile covers of the elements are preferably selected in such a manner that, when two permanent magnets and/or one permanent magnet and a metal component come into contact, a metallic sound can still be heard in spite of the damping provided by the covers. This arouses the child's interest in the toy.

The geometric shapes which the elements have as geometric basic shapes are preferably rectangular parallelepipeds, tubes, cones, cylinders or discs or else shapes assembled from the abovementioned shapes. Each of these 5 shapes has at least one flat surface. This is advantageous for joining the elements together.

One particularly preferred refinement of the toy according to the invention makes provision for part of an 10 element or one element or else a plurality of elements connected to one another to have the external form of an animal or at least the external form of part of an animal. In particular, this can be a sheep, a bear or a caterpillar. Furthermore, an element may also be designed in the form of a house or a means of transport, 15 for example a car, a ship or an aeroplane. This refinement is intended to arouse the child's interest and at the same time also to promote the child's learning process.

20 The same purpose is served by preferably at least one section of the textile cover of an element consisting of a reflecting foil, fleecy cloth, rough cloth or plastic parts.

25 Furthermore, for this purpose provision can advantageously also be made for one element to contain a means which produces a sound or a noise, i.e., for example, ringing, rattling or animal noises, if a certain point 30 of the element is pressed or if the element is moved. The means can produce the sound or the noise either mechanically or electronically.

35 The invention is explained in greater detail below by way of example with reference to the drawings, in which:

Fig. 1 shows a first exemplary embodiment of the toy according to the invention;

5 Fig. 2 shows a second exemplary embodiment of the toy according to the invention;

Fig. 3 shows a third exemplary embodiment of the toy according to the invention;

10 Fig. 4 shows a diagrammatic illustration of the front view of a fourth exemplary embodiment of the toy according to the invention;

15 Fig. 5 shows a diagrammatic illustration of the front view of a fifth exemplary embodiment of the toy according to the invention;

20 Fig. 6 shows a diagrammatic illustration of the front view of a sixth exemplary embodiment of the toy according to the invention; and

Fig. 7 shows a diagrammatic illustration of the front view of a seventh exemplary embodiment of the toy according to the invention.

25 Figs. 1, 2 and 3 depict the toys 1, 2 and 3 in the form of exemplary embodiments of the invention. Each of the toys 1, 2 and 3 is assembled from elements comprising Part 1, Part 2 and Part 3. The elements Part 1, Part 2 and Part 3 can be connected to one another via magnetic interactions and can be separated again from one another by a small effort.

30 Some of the elements Part 1, Part 2 and Part 3 are modelled on an animal form. Thus, the element Part 2 in Fig. 1 is in the form of a bear, while the element Part 2 in Fig. 2 is in the form of a sheep and the element Part 1 in Fig. 3 is modelled on a caterpillar form.

The base material for the basic shapes of the elements Part 1, Part 2 and Part 3 is a soft foam material. The foam blocks are covered in each case with a textile material. The covers have different textile materials in some sections in each case. For example, sections consist of fleecy cloth, rough cloth, reflecting foil and plastic parts.

10 The element Part 2 of the toys 2 and 3 have further special characteristics. Part 2 of the toy 2 produces a sound if the sheep's head 4 is pressed. The flipper 5 protruding at the side of Part 2 of the toy 3 contains a rattle.

15 Figs. 4 to 7 show diagrammatic illustrations of the front views of toys 10, 20, 30 and 40 in the form of further exemplary embodiments of the invention. The manner in which the elements Part 1, Part 2 and Part 3 of the above-described toys 1, 2 and 3 can be connected to one another will be explained further below with reference to these illustrations of the front views.

20 The toy 10 illustrated in Fig. 4 is composed essentially again of the elements Part 1, Part 2 and Part 3. The elements Part 1, Part 2 and Part 3 have as basic elements a respective foam block 101, 102 and 103, which is in the shape of a cone, a tube or a rectangular parallelepiped. The foam blocks 101, 102 and 103 are covered in each case with a textile cover 104, 105 and 106, respectively.

25 The magnetic interactions between the elements Part 1 and Part 2 or Part 2 and Part 3 are produced by means of a permanent magnet 110 and 113, respectively, and a metal disc 111 and 112, respectively. For this purpose, the permanent magnet 110 and the metal disc 111 have been embedded in a cutout in the foam block 101 and

102, respectively, and bonded to the foam material. A metal disc 112 is fitted in the same manner on the opposite side of the foam block 102. Furthermore, a permanent magnet 113 has been embedded in the foam block
5 103.

So that a relatively stable magnetic connection can be formed between the elements Part 1, Part 2 and Part 3, the connecting surfaces are in each case flat.
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The permanent magnets 110 and 113 face the connecting surfaces with different polarity in each case, so that the elements Part 1 and Part 3 can also be connected directly to each other.

15 The textile covers 104, 105 and 106 are configured in such a manner that, when the elements Part 1, Part 2 and Part 3 are brought together, a magnetic interaction sufficient for a relatively stable connection is provided between the permanent magnets 110 and 113 and the metal discs 111 and 112. In order to permit a relatively stable connection, the textile covers 104, 105 and 106 should not be too thick. By contrast, the textile covers 104, 105 and 106, however, have to have a certain strength so that the risk of injury caused by the hard surfaces of the permanent magnets 110 and 113 and metal discs 111 and 112 is minimized.
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Furthermore, the textile covers 104, 105 and 106 are designed in such a manner that, when the elements Part 1, Part 2 and Part 3 are joined together, a metallic noise of interest to children can be heard.
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35 The toy 20 shown in Fig. 5 is largely identical to the toy 10 shown in Fig. 4. Structurally identical parts are therefore provided with the same reference numbers in Figs. 4 and 5.

One difference of the toy 20 from the toy 10 is that, in the case of the toy 20, the metal discs 111 and 112 have been replaced by permanent magnets 115 and 116. A further difference is that the magnetic dipole axes of

5 the permanent magnets 114, 115, 116 and 117 are now aligned parallel to the connecting planes. Consequently, the elements Part 1, Part 2 and Part 3 can always be combined with one another in pairs.

10 The toy 30 illustrated in Fig. 6 differs from the toy 20 shown in Fig. 5 by the alignment of its permanent magnets 118, 119, 120 and 121, the magnetic dipole axes of which are orthogonal to the connecting planes. Furthermore, the poles of the permanent magnets 118, 119, 15 120 and 121 are aligned in such a manner that the elements Part 1, Part 2 and Part 3 can be joined together only in the sequence shown in Fig. 6. This measure increases the demands made of the child.

20 A further increase in the degree of difficulty is provided by the toy 40 shown in Fig. 7. The polarity of the permanent magnet 124 has been reversed here in comparison with the toy 30. The toy 40 can therefore only be assembled in the sequence shown in Fig. 7 if a further element part 4 is inserted between the elements 25 Part 2 and Part 3, said further element comprises a disc-shaped foam block 107 covered with a textile cover 108, and two metal discs 125 and 126 embedded in the foam block 107.